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CURRENT SERIAL RECORDS

**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
for  
**COLORADO and NEW MEXICO**

UNITED STATES DEPARTMENT of AGRICULTURE--SOIL CONSERVATION SERVICE  
and  
COLORADO AGRICULTURAL EXPERIMENT STATION  
STATE ENGINEER of COLORADO  
and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, National Park Service, Corps of Engineers and other Federal, State, and private organizations.

**SPECIAL  
MEASUREMENT**

# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Soil Conservation Service, 511 N.W. Broadway - Room 507, Portland, Oregon 97209.

## PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
<b>RIVER BASINS</b>			
WESTERN UNITED STATES _____	MONTHLY (FEB.-MAY) _____	PORTLAND, OREGON _____	ALL COOPERATORS
BASIC DATA SUMMARY _____	OCTOBER 1 _____	PORTLAND, OREGON _____	ALL COOPERATORS
<b>STATES</b>			
ALASKA _____	MONTHLY (MAR.-MAY) _____	PALMER, ALASKA _____	ALASKA S.C.D.
ARIZONA _____	SEMI-MONTHLY (JAN. 15 - APR. 1) _____	PHOENIX, ARIZONA _____	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO _____	MONTHLY (FEB.-MAY) _____	FORT COLLINS, COLORADO _____	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO _____	MONTHLY (JAN.-JUNE) _____	BOISE, IDAHO _____	IDAHO STATE RECLAMATION ENGINEER
MONTANA _____	MONTHLY (JAN.-JUNE) _____	BOZEMAN, MONTANA _____	MONT. AGR. EXP. STATION
NEVADA _____	MONTHLY (JAN.-MAY) _____	RENO, NEVADA _____	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES DIVISION OF WATER RESOURCES
OREGON _____	MONTHLY (JAN.-JUNE) _____	PORTLAND, OREGON _____	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
_____	MONTHLY (JAN.-JUNE) _____	SALT LAKE CITY, UTAH _____	UTAH STATE ENGINEER
WASHINGTON _____	MONTHLY (FEB.-JUNE) _____	SPOKANE, WASHINGTON _____	WN. STATE DEPT. OF CONSERVATION
WYOMING _____	MONTHLY (FEB.-JUNE) _____	CASPER, WYOMING _____	WYOMING STATE ENGINEER

## PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA _____	MONTHLY (FEB.-JUNE) _____	WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA _____	MONTHLY (FEB.-MAY) _____	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.



# WATER SUPPLY OUTLOOK

## Federal-State-Private Cooperative Snow Surveys Special Snow Report for Colorado and Wyoming

SOIL CONSERVATION SERVICE  
Snow Survey Section  
Colorado State University  
Fort Collins, Colorado

June 1, 1965

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation Service

Snow Course	Date	Current Information		Past Record		
		Snow Depth In Inches	Water Content In Inches	June 1 1964	June 1 Avg.	May 1 Avg.
<u>Colorado</u>						
Cameron Pass	5/27	71	31.0	21.7	20.8	28.1
Willow Creek Pass	5/27	9	3.5	0.0	1.6	12.0
Park View	5/27	1	0.5	0.0	0.1	6.8
Columbine Lodge	5/27	24	10.6	0.0	3.8	22.9
Berthoud Summit	5/28	49	20.9	8.5	16.2	21.6
Red Mountain	5/28	63	31.6	11.2	18.5	31.4
Fremont Pass	5/28	45	19.0	5.4	8.8	19.5
Tennessee Pass	5/28	0	0.0	0.0	0.0	8.5
Vail Pass	5/27	33	15.0	0.5	3.2	16.3
Porphyry Creek	5/28	39	18.6	9.9	6.5	17.7
Mesa Lakes	5/30	18	7.1	0.0	0.0	15.9
Wolf Creek Pass	5/28	49	25.5	0.0	6.3	24.7
Wolf Creek Summit	5/28	103	48.6	14.1	24.6	30.2
Spud Mountain	5/29	69	31.2	6.0	12.3	23.8
Upper San Juan	5/28	55	27.8	1.5	4.2	30.2
Two Mile	5/27	58	21.2	7.6	14.1	19.8
University Camp	5/29	42	20.0	- -	14.9	24.9
Milner Pass	5/27	20	7.1	0.0	- -	12.1
<u>Wyoming</u>						
Bottle Creek	6/2	5	1.5	0.0	- -	11.1
Webber Springs	6/2	12	6.2	0.0	4.6	15.8
Old Battle	6/2	56	28.5	17.1	19.6	33.2
No. French Creek	6/1	59	29.3	27.9	24.4	32.7
No. Barrett Creek	6/1	32	16.1	9.5	10.9	20.4
Ryan Park	6/1	No Survey		0.0	0.0	7.7

Snow is much above normal at the high elevations. Forecasts are being revised downward 10% because of the cold spring. Streamflow will be reduced due to the extreme amount of evaporation of the snow pack. Streams are flowing slightly above normal and will probably continue.



# WATER SUPPLY OUTLOOK

## Federal-State-Private Cooperative Snow Surveys Special Snow Report for Colorado and Wyoming

SOIL CONSERVATION SERVICE  
Snow Survey Section  
Colorado State University  
Fort Collins, Colorado

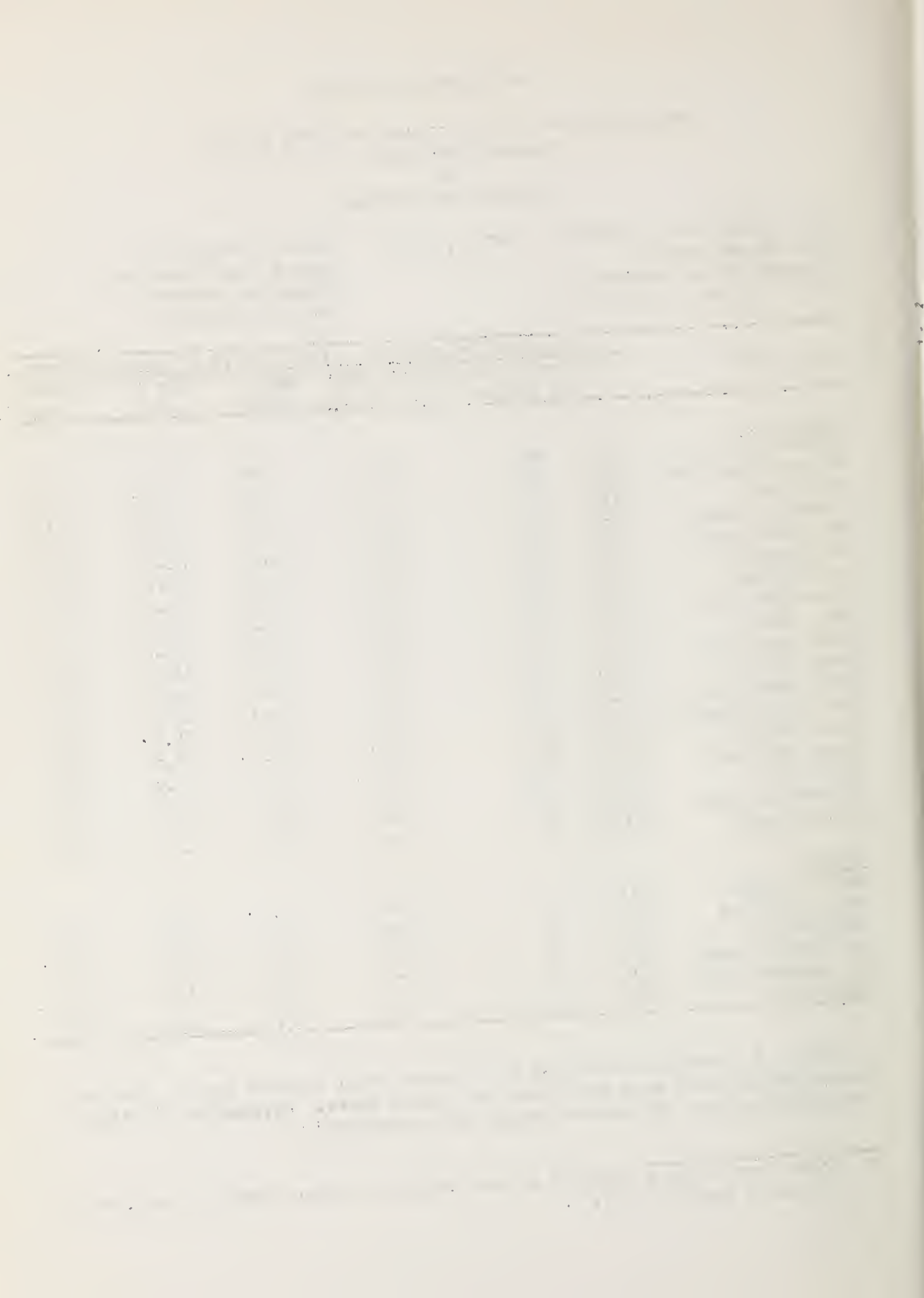
May 15, 1965

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation

Snow Course	Current Information			Past Record of Water Content		
	Date	Snow Depth In Inches	Water Con- tent Inches	May 15 1964	May 15 Avg.	May 1 Avg.
<u>Colorado</u>						
Cameron Pass	5/13	74	34.6	34.6	25.3	28.1
Willow Creek Pass	5/13	26	10.9	6.7	6.8	12.0
Park View	5/13	13	4.6	4.1	2.0	6.8
Columbine Lodge	5/12	47	22.5	20.7	13.9	22.9
Berthoud Summit	5/14	58	23.1	18.9	21.7	21.6
Red Mountain	5/14	78	35.8	28.8	30.7	31.4
Fremont Pass	5/14	53	21.2	14.5	14.6	19.5
Tennessee Pass	5/14	17	6.2	3.6	0.0	8.5
Vail Pass	5/13	43	20.0	13.0	10.4	16.3
Porphyry Creek	5/14	51	24.0	22.8	14.0	17.7
Mesa Lakes	5/15	47	17.5	16.2	9.3	15.9
Wolf Creek Pass	5/12	71	37.3	15.1	16.2	24.7
Wolf Creek Summit	5/12	107	48.6	21.0	31.5	30.2
Spud Mountain	5/14	84	35.9	17.0	19.5	23.8
Upper San Juan	5/12	80	39.3	18.7	21.6	30.2
Two Mile	5/13	58	22.7	15.3	17.2	19.8
University Camp	5/18	53	25.0	NS	21.4	24.9
Milner Pass	5/14	37	14.6	12.8	- -	12.1
<u>Wyoming</u>						
Bottle Creek	5/14	45	12.6	11.4	4.5	11.1
Webber Springs	5/14	44	17.9	15.7	8.0	15.8
Old Battle	5/14	83	36.6	34.9	27.4	33.2
No. French Creek	5/13	71	30.9	43.1	29.6	32.7
No. Barrett Creek	5/13	53	22.7	27.0	16.9	20.4
Ryan Park	5/13	15	5.8	12.3	3.8	7.7

The high elevation snow pack in Colorado still remains good\*. The cool spring has retarded snow melt over the entire state. Streamflow is still comparatively low. Forecasts remain the same as May 1.

\* Snow courses still indicate a snow pack that is much above normal, some places as much as 230%.





# WATER SUPPLY OUTLOOK

## Federal-State-Private-Cooperative Snow Surveys

### EARLY SEASON SNOW REPORT FOR COLORADO

SOIL CONSERVATION SERVICE  
Snow Survey Section  
Colorado State University  
Fort Collins, Colorado

January 1, 1965

Report Prepared by  
Jack N. Washichek and  
Donald W. McAndrew  
Soil Conservation Service

Snow Course	Current Information			Past Record of Water Content		
	Date	Snow Depth In Inches	Water Con- tent Inches	January 1 Average	Last Year	February 1 Average
Berthoud Summit	12/29	42	8.6	8.4*	4.8	12.3*
Columbine Lodge	12/29	59	12.1	7.7*	4.6	15.7
Fremont Pass	12/30	44	9.6	6.1*	2.9	10.7
Mesa Lakes	12/31	36	8.6	4.9**	4.1	10.8
Porphyry Creek	12/29	46	10.3	7.4*	5.1	10.5
Red Mountain	12/30	70	16.5	10.3**	7.5	18.0*
Spud Mountain	12/30	62	15.1	8.6*	3.1	16.7*
Tennessee Pass	12/30	40	7.3	2.3**	1.3	6.4
Two Mile	12/29	33	5.9	7.9*	2.4	9.0*
Upper San Juan	12/30	82	19.8	12.2*	4.8	21.7
Vail Pass	12/29	49	10.9	5.4*	3.2	10.9*
Wolf Creek Pass	12/30	77	18.8	9.4*	4.5	19.3
Wolf Creek Summit	12/30	77	18.7	13.1*	4.7	19.1*

\* Averages Adjusted to 1948-62 period.

\*\* No average - less than 5 years record.

Snowfall to date on the South Platte ranges from slightly below normal to near normal. The snow pack varies upward to 150% in the Rio Grande Drainage, 170% in the Southwest part of the state and 130% to 160% through the Central and Northwestern area. Mountain soils under the snow are relatively dry throughout the state.

Only about one-third of the snow season has passed. The water supply outlook will depend largely on the amount of snowfall during the remaining winter and spring months. If the snowfall during the remaining months is average or better, runoff for 1965 should be good and better than the past two seasons. Reservoir storage is poor.



# LIST of COOPERATORS

The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

## STATE

Colorado State Engineer  
New Mexico State Engineer  
Nebraska State Engineer  
Colorado Experiment Station  
Rocky Mountain Forest and Range Experiment Station

## FEDERAL

Department of Agriculture

Forest Service  
Soil Conservation Service

Department of Interior

Bureau of Reclamation  
Geological Survey  
National Park Service  
Indian Service

Department of Commerce

Weather Bureau

War Department

Army Engineer Corps

Atomic Energy Commission

## INVESTOR OWNED UTILITIES

Colorado Public Service Company  
Public Service Company of New Mexico

## MUNICIPALITIES

City of Denver                      City of Greeley  
City of Boulder                      City of Fort Collins

## WATER USERS ORGANIZATIONS

Arkansas Valley Ditch Association  
Colorado River Water Conservation District

## IRRIGATION PROJECTS

Farmers Reservoir and Irrigation Company  
San Luis Valley Irrigation District  
Santa Maria Reservoir Company  
Costilla Land Company  
Uncompahgre Valley Water Users' Association  
Twin Lakes Reservoir and Canal Company  
Trinchera Irrigation Co.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
SNOW SURVEY UNIT  
AG. ENGINEERING SHOP  
COLORADO STATE UNIVERSITY  
FORT COLLINS, COLORADO 80521

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